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(54) Title: METHOD AND SYSTEM FOR ELECTRONICALLY DELIVERING TARGETED INVITATIONS TO PARTICIPATE IN MARKET RESEARCH, BASED ON OBSERVED PURCHASE BEHAVIOR

(57) Abstract:

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**Method and System for Electronically Delivering Targeted Invitations to Participate in Market Research, Based on Observed Purchase Behavior**

**CROSS-REFERENCE TO RELATED APPLICATIONS**

The present application claims the benefit of and priority to U.S. provisional application Serial No. 60/188,172 (attorney docket number 7791-0110-25 PROV, filed March 10, 2000), which is incorporated herein by reference. The present application is related to technologies described in one or more of U.S. patent application Serial Nos. 09/226,174, 09/472,069, 09/472,197 and 09/526,535 (attorney docket number 7791-0109-25, filed March 16, 2000) and U.S. provisional application Serial No. 60/188,176 (attorney docket number 7791-0108-25 PROV, filed March 10, 2000), each of which is incorporated herein by reference.

**BACKGROUND OF THE INVENTION**

**Field of the Invention**

The present invention relates generally to the use of a computer system, and more specifically to the use of a computer system for inviting consumers to participate in market research, based on the observed purchase behavior of the consumers. Examples of market research include questionnaires, review of potential packaging designs, review of potential products, providing opinions, advertisement testing, and concept testing and/or participation in Internet-based chat sessions, discussion groups, chat rooms, and focus groups.

**Discussion of the Background**

Market research is used by advertisers, manufacturers, retailers, and consumer advocacy groups as well as other people, groups, and organizations to provide information on consumer psychology and trends. Information derived from market research is used to increase sales and deliver to consumers products that are more likely to be well received by the public. A common form of market research involves mass mailings, e-mails, and telephone calls to random consumers. These consumers are invited to participate in surveys, answer questionnaires, and to participate in live interviews with market surveyors and other entities that conduct market research. Thus, such market research is conducted in a random or quasi-random manner. As a result, many consumers invited to participate in market research may have little or no knowledge of the subject matter of the market research. As a result, many of the consumers who participate

in market research are not helpful because they do not use or purchase products that are the subject of the research. Additionally, many consumers are annoyed by invitations, often in the form of "junk mail," because the subject matter of the market research is unrelated to the consumers' purchasing behavior and habits. Further, a consumer's alleged behavior is not necessarily the same as his or her actual behavior. Thus, information provided by consumers may not be a good basis for targeting research invitations.

### SUMMARY OF THE INVENTION

Accordingly, one object of this invention is to target research invitations to specific consumers, based on the consumers' observed purchase histories.

Another object of the present invention is to provide a novel method and system for delivering targeted research invitations to consumers at their computers.

These and other objects are achieved by providing a novel method, system, and computer program product for delivering targeted research invitations. The method, on which the system and computer program product are based, includes associating a first identifier corresponding to a consumer with a second identifier associated with purchase history information of the consumer. The purchase history information includes information of at least one observed purchase of an item purchased by the consumer. A targeted research invitation associated with the second identifier is received. The invitation is targeted on the basis of the consumer's purchase history information and includes contact information to be used by the consumer to participate in market research and an incentive to induce the consumer to participate in the market research. The targeted research invitation is then delivered to a remote computer associated with the first identifier. The first identifier is preferably a unique alphanumeric string that is associated with the consumer, such as a loyalty card number, e-mail address, name, or cookie ID.

Thus, the present invention advantageously targets research invitations based on observed behavior of consumers, rather than alleged behavior of consumers. Additionally, the present invention may utilize a computer network, such as the Internet, to electronically deliver the targeted research invitations to consumers without having to use a store printer.

According to another aspect of the invention, a list of consumer identifiers corresponding to consumers and targeted research invitations are stored. Each of the consumer identifiers is

associated with at least one of the targeted research invitations. One of the customer identifiers is received from a remote computer, and one of the targeted research invitations is selected for delivery to the remote computer, based on which targeted research invitation is associated with the consumer identifier received from the remote computer. The selected targeted research invitation is then delivered to the remote computer. In this manner, targeted research invitations may be electronically delivered to consumers at their computers.

According to another aspect of the present invention the purchase history information of consumers is stored. Targeted research invitations are selected for delivery to the consumers at remote computers, based on the corresponding purchase history information of the consumers. The targeted research invitations include contact information to be used by the consumers to participate in market research and an incentive to induce the consumers to participate in the market research. Each consumer identifier is associated with the corresponding targeted research invitation selected for delivery to the corresponding consumer. In one embodiment, purchase history information is updated and the effect of consumers' participation in the market research is analyzed based on the updated purchase history information. Accordingly, once a consumer participates in market research, the effects of participation may be monitored, based on observed purchase behavior.

### BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the invention and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

Figure 1 is a computerized system for storing purchase histories of consumers, according to an embodiment of the present invention;

Figure 2A is a purchase history table for associating customer identifiers (CIDs) with purchase histories of consumers, according to an embodiment of the invention;

Figure 2B is a purchase history criteria table for associating purchase history criteria with research invitations targeted to consumers having purchase histories that meet the corresponding purchase history criteria, according to an embodiment of the invention;

Figure 2C is a research invitation table for associating CIDs with targeted research

invitations, according to an embodiment of the invention;

Figure 2D is a consumer identification table for associating various forms of identifying information of consumers, according to an embodiment of the invention;

Figure 3 is a schematic illustration of a system for conducting market research over a computer network such as the Internet, according to an embodiment of the invention;

Figures 4A and 4B are exemplary research invitations to participate in market research;

Figure 5A is a flowchart describing a process for targeting research invitations based on consumers' purchase histories, according to an embodiment of the invention;

Figure 5B is a flowchart describing a process for associating targeted research invitations with identifying information of consumers, according to an embodiment of the invention;

Figure 5C is a flowchart describing a process for delivering a targeted research invitation to a consumer, according to an embodiment of the invention;

Figure 6 is a flowchart describing a process for conducting market research and analyzing the effects of the market research on consumers, according to an embodiment of the invention; and

Figure 7 is a schematic illustration of a computer system programmed to perform one or more of the special purpose functions of the present invention.

### DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, wherein like reference numerals designate identical or corresponding parts throughout the several views, and more particularly to Figure 1 thereof, there is shown a computerized system for delivering targeted advertisements to customers. The system of Figure 1 includes a host computer 101, a global purchase database 103, one or more retail stores 105, a purchase data computer 107, a local purchase database 109, a store controller 111, a store database 113, and one or more points of sale 115, each including a printer 117, a terminal 119, and a scanner 121.

The host computer 101 is any suitable workstation, server, or other device, such as the computer system 701 of Figure 7, for communicating with the purchase data computer 107 and for storing information in and retrieving information from the global purchase database 103. The host computer 101 communicates with the purchase data computer 107 using any suitable protocol and may be implemented using the computer system 701 of Figure 7, for example.

The global purchase database 103 is a file that includes records containing information for providing targeted research invitations. This information includes information of each purchase made by a customer in the retail store 105. Such information may include, but is not limited to the shelf keeping unit (SKU), brand, size, weight, price, date and time of purchase, and customer identifier (CID) of the customer making the purchase, for example. In one embodiment, portions of this information are obtained from bar codes on purchase items, which are scanned by the scanner 121 during a transaction. These bar codes may contain UPC, JAN, and EAN information. Records in the global purchase database 103 contain fields together with a set of operations for searching, sorting, recombining, and other database functions. The global purchase database 103 may be implemented as two or more databases, if desired, and may be an aggregate of several databases storing consumer purchase data obtained from different sources such as the Internet, grocery stores, hardware stores, pet superstores, video stores, and restaurants, for example. One or more of U.S. Pat. Nos. 5,832,457; 5,649,114; 5,430,644; and 5,592,560 describe techniques for collecting consumer purchase history information and for storing such information in databases such as the global purchase database 103 and the store database 113, for example. U.S. Pat. Nos. 5,832,457; 5,649,144; 5,430,644; and 5,592,560 are incorporated herein by reference. Additionally, techniques for collecting consumer purchase information and for storing such information in databases, such as the global purchase database 103 and the store database 113, are described in other patents owned by Catalina Marketing and/or Catalina Marketing International. Each patent owned by Catalina Marketing and/or Catalina Marketing International is incorporated herein by reference.

The retail store 105 is generically referred to as a retail location and is a place where goods are kept for retail sale to customers. As noted above, many retail stores 105 may be connected to the host computer 101.

The purchase data computer 107 may be implemented using the computer system 701 of Figure 7, for example, or any other suitable PC, work station, server, or device for communicating with the host computer 101, for storing and retrieving information in the local purchase database 109, for monitoring data transmitted between the terminal 119 and the store controller 111 (i.e., transaction data) and for controlling the printer 117.

The local purchase database 109 is a file that includes records containing information for providing targeted research invitations in accordance with the present invention. The records in

the local purchase database 109 contain fields for associating bar codes with products in the retail store 105 (e.g., by using UPC, JAN, and/or EAN codes). The local purchase database 109 also includes operations for searching, sorting, recombining, and other database functions. The local purchase database 109 may be implemented as two or more databases, if desired. Periodically, (e.g., daily) sales transaction information stored in the local purchase database 109 is retrieved by the purchase data computer 107 and sent to the host computer 101, which uses the information to update the purchase history information stored in the global purchase database 103.

The store controller 111 is any computer or device for communicating with the terminal 119 and for using information stored in the store database 113 to carry out transactions at the point of sale (POS) 115. A description of a store controller 111 is found in U.S. Patent No. 5,173,851, for example.

The store database 113 is a file that includes records containing information for carrying out transactions at the point of sale 115 by scanning bar codes printed on purchased items. The records in the store database 113 contain fields for associating bar codes with products and their corresponding prices. The store database 113 also includes operations for searching, sorting, recombining, and other database functions, and may be implemented as two or more databases, if desired.

The retail store 105 includes one or more points of sale 115. Each point of sale 115 preferably includes a corresponding printer 117, a terminal 119, and a scanner 121. The printer 117 receives printing instructions from the purchase data computer 107. According to an embodiment of the present invention, targeted research invitations are printed by the printer 117 in response to receiving commands from the purchase data computer 107. The terminal 119 may be implemented as a standard cash register and may include a screen, credit card reader, and numeric keypad, for example. The terminal 119 communicates with the store controller 111 and the scanner 121. The scanner 121 may be implemented as any conventional scanning device for reading product information such as an item code (e.g., UPC, EAN, or JAN) from bar codes or other indicia on the product. This information read by the scanner 121 is transmitted to the store controller 111 via the terminal 119. The store controller 111, uses the scanned information and the information stored in the store database 113 to determine information of the transaction including the SKU, price, quantity, and date and time of the transaction, for example.

If there are multiple points of sale 115 within the retail store 105, then each terminal 119

is preferably arranged on a loop with the store controller 111. The purchase data computer 107 is located in front of the store controller 111 on the loop so that information transmitted from the terminals 119 to the store controller is monitored by the purchase data computer 107.

It is to be understood that the system in Figure 1 is for exemplary purposes only, as many variations of the specific hardware and software used to implement the present invention will be readily apparent to one having ordinary skill in the art. For example, the functionality of the purchase data computer 107 and the store controller 111 may be combined in a single device. These implementations and other implementations of retail computer systems are described in greater detail in one or more of U.S. Pat. Nos. 4,723,212; 4,910,672; 5,173,851; 5,612,868; and 6,026,370, each of which is incorporated herein by reference. To implement these variations as well as other variations, a single computer (e.g., the computer system 701 of Figure 7) may be programmed to perform the special purpose functions of two or more of any of the devices shown in Figure 1. On the other hand, two or more programmed computers may be substituted for any one of the devices shown in Figure 1. Principles and advantages of distributed processing, such as redundancy and replication, may also be implemented as desired to increase the robustness and performance of the system, for example.

The present invention stores information relating to various consumers who shop at the retail store 105, the purchase histories of those consumers, targeted research invitations, and identifying information of the consumers, for example. This information is stored in one or more memories such as a hard disk, optical disc, magneto-optical disk, and/or RAM, for example. One or more databases, such as the global purchase database 103 and the store database 113, may store the information used to implement the present invention. The databases are organized using data structures (e.g., records, tables, arrays, fields, graphs, trees, and/or lists) contained in one or more memories, such as the memories listed above or any of the storage devices listed below in the discussion of Figure 7, for example.

Figure 2A, 2B, 2C, and 2D depict data structures used for implementing a system for providing targeted research invitations in accordance with an embodiment of the present invention. The data structures are depicted in a relational format, using tables, whereby information stored in one column (i.e., field) of a table is mapped or linked to information stored in the same row (i.e., record) across the other column(s) of the table. These data structures are used by the host computer 101 and/or the purchase data computer 107 to provide research



invitations to consumers in accordance with the present invention. The data structures shown in Figures 2A, 2B, 2C, and 2D are stored in the global purchase database 103, the local purchase database 109, and/or any other suitable storage device(s) or medium(s).

Figure 2A is a purchase history table 201 that includes a field 203 for storing consumer identifiers (CIDs) and a field 205 for storing purchase histories of the consumers in the field 203. A CID is any identifier that is scanned, read, or otherwise entered into a computer or terminal to identify a customer. Each customer may have multiple CIDs. Preferably, the CID is represented as a bar code so that it can be quickly scanned at checkout by the scanner 117, although any other type of machine readable or non-machine readable implementations for storing or displaying identifications may be used, including magnetic strips, memory chips, and smart cards. Examples of CIDs include credit card numbers, debit card numbers, social security card numbers, driver's license numbers, checking account numbers, street addresses, names, e-mail addresses, telephone numbers, frequent customer card numbers, shopper card identifications (SCIDs), or shopper loyalty card numbers issued by the retail store 105, although any other suitable form of identification may be used. For example, a CID may be a cookie stored on a consumer's computer and that identifies the user's computer. As used herein, a "cookie" is any block of data that includes identifying information (i.e., a cookie ID) for identifying a consumer's computer to a server or remote computer.

Preferably, the field 205 is divided into several subfields for separately storing purchase data such as the location of the purchase, the SKU, the price of each item purchased, date and time of the transaction, and any other desired information of consumers' transactions.

Figure 2B is a purchase history criteria table 207 that includes a field 209 for storing purchase history criteria and a field 211 for storing targeted research invitations. Purchase history criteria are criteria that must be met by a consumer, based on the consumer's purchase history in the field 205, to receive the corresponding research invitation(s) in the same record in the field 211. Examples of research invitations stored in the field 211 are provided below with respect to Figures 4A and 4B.

Figure 2C is a research invitation table 213 including a field 215 for storing CIDs and a field 217 for storing research invitations. The research invitation table 213 associates each CID with one or more research invitations stored in the same record in the field 217. Using the research invitation table 213, the purchase data computer 107 may determine research invitations

to deliver to a computer of the consumer (e.g. a "Net appliance"), based on the consumer's CID or other identifier associated with the consumer.

Figure 2D is an exemplary consumer identification table 219 for associating consumers' CIDs with other identifying information of consumers. The consumer identification table 219 includes a field 221 for storing CIDs of consumers, a field 223 for storing e-mail addresses of consumers, a field 225 for storing cookie IDs, and a field 227 for storing login IDs of consumers. Thus, the consumer identification table 219 may be used to identify a consumer's CID based on other identifying information (e.g., e-mail address, cookie ID, login ID) stored in the other fields of the consumer identification table 219. The consumer identification table 219 may be populated during a registration process in which a consumer provides his CID as well as other identifying information such as his or her e-mail address and/or login ID. In one embodiment, cookie IDs are associated with consumers' CIDs by sending a cookie, including a cookie ID, to each consumer's computer during the registration process. A cookie ID is any data identifying a cookie, and thereby identifies the computer on which the cookie is stored. Depending on how consumers' CIDs are to be cross-referenced, the number of fields in the consumer identification table 219 may vary. For example, if consumers always provide their CIDs directly, then the table 219 is not necessary because the CIDs do not have to be cross-referenced. However, if consumers are to be recognized based on cookies sent from their computers, then a field (i.e., the field 225) for storing cookie IDs is needed. Likewise, fields storing e-mail addresses and login IDs may be used if those types of identifying information will be used to associate a consumer with his or her CID.

Figure 3 is a system for conducting market research over the Internet. One or more consumer computers 301 are connected by the Internet 307 to one or more market research servers 309. The consumer computer 301 is any computer for accessing a computer network such as the Internet 307. Examples of consumer computers 301 include PCs, workstations, laptops, palmtops, the computer system 701 of Figure 7, and household appliances (e.g., a refrigerator, oven, microwave oven) configured to access the Internet (i.e., "Net appliances" or "Web appliances"). The consumer computer 301 preferably includes Web browser software for permitting a user (i.e., a consumer) to view documents available on the Internet (e.g., HTML documents). The market research server 309 is a computer, server, device, and/or software for conducting and/or facilitating market research over the Internet 307. Such market research

includes questionnaires, discussion groups, chat rooms, and/or focus groups. The market research server 309 communicates with a market research database 311, which includes one or more files for storing information for delivering targeted research invitations. Such information includes the research invitation table 213 and the consumer identification table 219, for example.

Figures 4A and 4B are examples of research invitations that may be delivered from the market research server 307 to the consumer computer 301, for example. As shown in Figures 4A and 4B, each research invitation 401 includes contact information 403, condition information 404, reward information 405, and a code (e.g., a virtual personal identification number (PIN) 407). The contact information is a Web site, Web page, uniform resource locator (URL) and/or e-mail address, for example, that a person may use to initiate participation in market research. The term "URL" is intended to include uniform resource names, uniform resource identifiers, and equivalents thereof. The condition 404 indicates what a person must do to receive the reward 405. Examples of conditions 404 are participation in surveys, market research, and/or completing questionnaires. The reward 405 may be a check, coupon, discount, certificate, redeemable medium, and/or other positive benefit to a person who meets the condition 404. The code 407 is an identification that uniquely identifies each research invitation. In an embodiment of the invention, when a person attempts to receive the reward 405 by participating in the market research, the person is asked to provide the code 407 on the research invitation 401. In this manner, the surveyor, group, or person conducting the market research can avoid providing more than one reward 405 for each research invitation 401 and avoid double counting participants. This embodiment may be implemented by storing the code 407 with the other research invitation information in the fields 211 and 217, for example. According to one embodiment, the codes 407 are provided to the entity conducting the market research or the entity rewarding the people participating in the market research (i.e., a market surveyor), for example, so that each code 407 may be recognized by the surveyor and only one reward 405 is provided for each code 407. This and other embodiments may utilize PIN technology such as described in U.S. Pat. Nos. 5,915,007 and 5,892,827, each of which is incorporated herein by reference.

It is to be understood that each research invitation 401 may be tailored to suit different purposes, as desired, and may omit one or more of the items 403, 404, 405, and 407. The rewards 405 and the subject of the market research may involve subject matter other than groceries and retail stores. The research invitations 401 may also include other information

indicating how long the offer or invitation is good for and what equipment may be necessary to participate in the market research (e.g. a PC), as well as other conditions necessary to receive the reward 405.

Figure 5A is a flowchart for explaining how targeted research invitations are delivered, based on customers' purchase histories. In step 501 the host computer 101 polls the purchase data computer 107 in each of the retail stores 105 for purchase history information to update the purchase history information stored in the global purchase database 103. Then, in step 503 the host computer 101 generates behavioral information from the purchase history information stored in the global purchase database 103. This behavioral information may be any information that a market researcher (i.e., surveyor) wishes to use to determine whether a targeted research invitation should be delivered to a consumer. Examples of behavioral information are whether a consumer has purchased at least five pounds of dog food per month for the last year, whether the consumer has purchased cold medicine in the last week, and whether the consumer consistently purchases lactose-free milk. The targeted research invitations 401 may be implemented as Internet banners, e-mail messages, e-mail attachments, regular mail messages, interactive television messages, or telephone messages, for example.

In step 505 the host computer 101 compares the behavioral information generated in step 503 to purchase criteria stored in the field 209 of the purchase criteria table 207. If the behavioral information of any consumer meets the purchase criteria in the field 209, then the consumer's CID is stored in the field 215 and the corresponding research invitation in the field 211 is stored in the field 217 of the research invitation table. In this manner, the research invitation table 213 is populated with CIDs and associated targeted research invitations to be delivered to the corresponding consumers. In an alternate embodiment, the host computer 101 merely sends a list of CIDs corresponding to consumers who meet certain criteria to the market research server 309, and the research invitation table 213 is populated by the market research server 309, which receives the targeted research invitations from another computer or a computer readable medium, for example. Accordingly, research invitations are targeted based on observed purchase behavior (i.e., consumers' purchase histories) rather than delivered randomly or on the basis of alleged consumer behavior. Thus, the present invention facilitates the process of delivering research invitations to the right consumers.

In step 507 the host computer 101 delivers the research invitation table 213 to the market

research server 309. If desired, the research invitation table 213 is broken up into smaller, separate research invitation tables, which are delivered to different market research servers 309. In this manner, only the CIDs of customers that have registered with a particular market research server 309 are provided to that market research server 309. The research invitation table(s) 213 is received by the market research server(s) 309 and stored in the market research database 311. The stored research invitation tables 213 are updated as desired to reflect new programs and incentives.

Figure 5B is a flowchart showing how the market research server 309 associates consumers' CIDs with other identifying information of the consumers. In step 509 a consumer initiates online registration with the market research server 309, using the consumer computer 301. In step 511, the consumer provides to the market research server 309 identifying information, such as his or her CID, e-mail address, a login ID chosen by the consumer or provided automatically by the market research server 309, social security number, or any other identifying information. As long as the consumer provides the market research server 309 with his or her CID, then the market research server 309 may associate the consumer's CID with any other identifying information of the consumer. According to one embodiment, the consumer identification table 219 or a variation thereof is populated during the registration process and stored in the market research database 311 by the market research server 309. Additionally, in step 513 the market research server 309 may associate other identifying information with a consumer's CID, such as a cookie, which is sent from the market research server 309 to the consumer computer 301 and stored on the consumer computer 301. In this manner, whenever the consumer computer 301 accesses the market research server 309, the cookie, including a cookie ID, is sent back to the market research server 309, which uses the cookie ID stored in the field 225 to determine the consumer's CID stored in the field 221 in the same record as the cookie ID. Other forms of identification, such as e-mail addresses, allow the market research server 309 to deliver targeted research invitations to the consumer, without the consumer having to identify him or herself and without the use of cookies. Further, if the consumer provides a CID, when the consumer logs in, then the consumer identification table 219 does not have to be used. On the other hand, if a consumer provides a password, login ID, and/or identification information other than the consumer's CID, and if such information was associated with the consumer's CID in the consumer identification table 217 during registration, then the market

research server 309 may determine the consumer's CID from such information, regardless of which consumer computer 301 the consumer has used to access the market research server 309.

Figure 5C is a flowchart for explaining how targeted research invitations are delivered to consumers, according to an embodiment of the invention. In step 515 the market research server 309 receives identifying information from the consumer computer 301. This identifying information may be the consumer's CID or any other identifying information associated with the consumer's CID (e.g., a cookie ID or other identifier automatically sent from the consumer computer 301 or a login ID or password input to the consumer computer by the consumer). In step 517 the market research server 309 determines the consumer's CID, using the consumer identification table 217, for example, and determines which targeted research invitations are associated with that CID in the research invitation table 213. Then, the market research server 309 delivers the targeted research invitations to the consumer computer 301. If the targeted research invitations are delivered to the consumer on the basis of his or her e-mail address, street address, or other identifying information that does not require the consumer to be present at the consumer computer 301 when the targeted research invitation is delivered, then step 515 may be skipped. For example, if the consumer has provided his or her e-mail address, then targeted research invitations may be sent as e-mails or e-mail attachments that are delivered to consumer computer 301 via a mail server, for example, when the consumer computer 301 retrieves the invitations from the mail server in step 517.

Figure 6 is a flowchart for explaining how market research may be conducted over the Internet 307. In step 613, a customer uses a Web browser running on the computer 301 to view a web page identified by a URL specified by the contact information 403 on a targeted research invitation 401 delivered to the customer. Additionally, in step 613 the customer is asked to enter the code 407 appearing on the targeted research invitation 401. The code 407 operates the same as the virtual PIN, discussed above, to prevent the same research invitation 401 from being accepted more than once.

Then, in step 615, the customer participates in market research, such as a focus group. Upon completion of the consumer's participation in the research program, the consumer is rewarded in step 617 with the reward 405 on the targeted research incentive 401. The customer may be provided with the reward in any known manner. According to one embodiment, if the reward is cash, a check for the amount specified in the field 405 is delivered by mail to the

customer. Other forms of rewards are free long distance minutes, free virtual money which can be used to purchase products over the Internet, coupons for products sold at the retail store 105, and redeemable certificates for free items in the store 105. However, it may be preferable to reward consumers with Internet-related rewards, such as "Internet money," which may be redeemed to receive prizes that "cost" a specified amount of Internet money. Other rewards include pet items (e.g. a dog bowl), cookbooks, and household or kitchen items (e.g., a wine rack).

As noted above, the purchase history information stored in the global purchase database 103 is periodically updated, according to one embodiment. In step 619, the consumer's purchase history information is updated. Then, in step 621 the consumer's updated purchase history is analyzed. According to one embodiment this analysis is performed by comparing the consumer's purchase behavior prior to participating in the market research to the consumer's purchase behavior during and/or subsequent to participating in the market research. Then, based on the result of the analysis, in step 623 the effect of the market research on the consumer is determined (e.g., to see if the consumer switched product loyalty from brand X to brand Y or increased his rate of purchasing product Z). The use of consumers' observed behavior (i.e., purchase history information) rather than their alleged behavior helps to avoid misleading feedback that results when consumers simply report how test advertising or other forms of market research affected them.

All or a portion of the invention may be conveniently implemented using conventional general purpose computers or microprocessors programmed according to the teachings of the present invention, as will be apparent to those skilled in the computer art. Appropriate software can be readily prepared by programmers of ordinary skill based on the teachings of the present disclosure, as will be apparent to those skilled in the software art.

Figure 7 illustrates a computer system 701 upon which an embodiment according to the present invention may be implemented. Computer system 701 includes a bus 703 or other communication mechanism for communicating information, and a processor 705 coupled with bus 703 for processing the information. Computer system 701 also includes a main memory 707, such as a random access memory (RAM) or other dynamic storage device (e.g., dynamic RAM (DRAM), static RAM (SRAM), synchronous DRAM (SDRAM), flash RAM), coupled to bus 703 for storing information and instructions to be executed by processor 705. In addition, main

memory 707 may be used for storing temporary variables or other intermediate information during execution of instructions to be executed by processor 705. Computer system 701 further includes a read only memory (ROM) 709 or other static storage device (e.g., programmable ROM (PROM), erasable PROM (EPROM), and electrically erasable PROM (EEPROM)) coupled to bus 703 for storing static information and instructions for processor 705. A storage device 711, such as a magnetic disk or optical disc, is provided and coupled to bus 703 for storing information and instructions.

The computer system 701 may also include special purpose logic devices (e.g., application specific integrated circuits (ASICs)) or configurable logic devices (e.g., generic array of logic (GAL) or reprogrammable field programmable gate arrays (FPGAs)). Other removable media devices (e.g., a compact disc, a tape, and a removable magneto-optical media) or fixed, high density media drives, may be added to the computer system 701 using an appropriate device bus (e.g., a small computer system interface (SCSI) bus, an enhanced integrated device electronics (IDE) bus, or an ultra-direct memory access (DMA) bus). The computer system 701 may additionally include a compact disc reader, a compact disc reader-writer unit, or a compact disc juke box, each of which may be connected to the same device bus or another device bus.

Computer system 701 may be coupled via bus 703 to a display 713, such as a cathode ray tube (CRT), for displaying information to a computer user. The display 713 may be controlled by a display or graphics card. The computer system includes input devices, such as a keyboard 715 and a cursor control 717, for communicating information and command selections to processor 705. The cursor control 717, for example, is a mouse, a trackball, or cursor direction keys for communicating direction information and command selections to processor 705 and for controlling cursor movement on the display 713. In addition, a printer may provide printed listings of the data structures shown in Figures 2A, 2B, 2C, and 2D or any other data stored and/or generated by the computer system 701.

The computer system 701 performs a portion or all of the processing steps of the invention in response to processor 705 executing one or more sequences of one or more instructions contained in a memory, such as the main memory 707. Such instructions may be read into the main memory 707 from another computer-readable medium, such as storage device 711. One or more processors in a multi-processing arrangement may also be employed to execute the sequences of instructions contained in main memory 707. In alternative



embodiments, hard-wired circuitry may be used in place of or in combination with software instructions. Thus, embodiments are not limited to any specific combination of hardware circuitry and software.

As stated above, the system 701 includes at least one computer readable medium or memory programmed according to the teachings of the invention and for containing data structures, tables, records, or other data described herein. Stored on any one or on a combination of computer readable media, the present invention includes software for controlling the computer system 701, for driving a device or devices for implementing the invention, and for enabling the computer system 701 to interact with a human user, e.g., a consumer. Such software may include, but is not limited to, device drivers, operating systems, development tools, and applications software. Such computer readable media further includes the computer program product of the present invention for performing all or a portion (if processing is distributed) of the processing performed in implementing the invention.

The computer code devices of the present invention may be any interpreted or executable code mechanism, including but not limited to scripts, interpreters, dynamic link libraries, Java classes, and complete executable programs. Moreover, parts of the processing of the present invention may be distributed for better performance, reliability, and/or cost.

The term "computer readable medium" as used herein refers to any medium that participates in providing instructions to processor 705 for execution. A computer readable medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media includes, for example, optical, magnetic disks, and magneto-optical disks, such as storage device 711. Volatile media includes dynamic memory, such as main memory 707. Transmission media includes coaxial cables, copper wire and fiber optics, including the wires that comprise bus 703. Transmission media also may also take the form of acoustic or light waves, such as those generated during radio wave and infrared data communications.

Common forms of computer readable media include, for example, hard disks, floppy disks, tape, magneto-optical disks, PROMs (EPROM, EEPROM, Flash EPROM), DRAM, SRAM, SDRAM, or any other magnetic medium, compact disks (e.g., CD-ROM), or any other optical medium, punch cards, paper tape, or other physical medium with patterns of holes, a carrier wave (described below), or any other medium from which a computer can

read.

Various forms of computer readable media may be involved in carrying out one or more sequences of one or more instructions to processor 705 for execution. For example, the instructions may initially be carried on a magnetic disk of a remote computer. The remote computer can load the instructions for implementing all or a portion of the present invention remotely into a dynamic memory and send the instructions over a telephone line using a modem. A modem local to computer system 701 may receive the data on the telephone line and use an infrared transmitter to convert the data to an infrared signal. An infrared detector coupled to bus 703 can receive the data carried in the infrared signal and place the data on bus 703. Bus 703 carries the data to main memory 707, from which processor 705 retrieves and executes the instructions. The instructions received by main memory 707 may optionally be stored on storage device 711 either before or after execution by processor 705.

Computer system 701 also includes a communication interface 719 coupled to bus 703. Communication interface 719 provides a two-way data communication coupling to a network link 721 that is connected to a local network (e.g., LAN 723). For example, communication interface 719 may be a network interface card to attach to any packet switched local area network (LAN). As another example, communication interface 719 may be an asymmetrical digital subscriber line (ADSL) card, an integrated services digital network (ISDN) card or a modem to provide a data communication connection to a corresponding type of telephone line. Wireless links may also be implemented. In any such implementation, communication interface 719 sends and receives electrical, electromagnetic or optical signals that carry digital data streams representing various types of information.

Network link 721 typically provides data communication through one or more networks to other data devices. For example, network link 721 may provide a connection through LAN 723 to a host computer 725 or to data equipment operated by a service provider, which provides data communication services through an IP (Internet Protocol) network 727 (e.g., the Internet 307). LAN 723 and IP network 727 both use electrical, electromagnetic or optical signals that carry digital data streams. The signals through the various networks and the signals on network link 721 and through communication interface 719, which carry the digital data to and from computer system 701, are exemplary forms of carrier waves transporting the information. Computer system 701 can transmit notifications and receive data, including program code,

through the network(s), network link 721 and communication interface 719.

Obviously, numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

CLAIMS:

1. A method comprising the steps of:

associating a first identifier corresponding to a consumer with a second identifier associated with purchase history information of the consumer, the purchase history information including information of at least one purchase of an item purchased by the consumer;

storing a targeted research invitation associated with the second identifier and targeted on the basis of the consumer's purchase history information, the targeted research invitation including contact information to be used by the consumer to participate in market research; and

delivering the targeted research invitation to a remote computer associated with the first identifier.

2. A method according to claim 1, further comprising the step of:

receiving the first identifier during a registration process in which the consumer provides the first identifier and the second identifier, prior to the step of associating the first identifier and the second identifier.

3. A method according to claim 1, further comprising the step of:

receiving the first identifier from the remote computer after the step of associating the first identifier with the second identifier, after the step of storing the targeted research invitation, and prior to the step of delivering the targeted research invitation; and

wherein the step of delivering the targeted research invitation comprises the step of:

delivering the targeted research invitation to the remote computer in response to receiving the first identifier from the remote computer.

4. A method according to claim 3, wherein the first identifier is a cookie stored on the remote computer.

5. A method according to claim 1, wherein the first identifier is selected from the group consisting of: a cookie, an e-mail address, and a login ID.

6. A method according to claim 5, wherein the first identifier comprises an e-mail

address, the remote computer comprises a mail server, and the step of delivering comprises the step of:

delivering the targeted research invitation to the remote computer via e-mail.

7. A method according to claim 1, further comprising the step of:

receiving the second identifier and the associated targeted research invitation from a host computer.

8. A method according to claim 1, further comprising the steps of:

storing a list of second identifiers including the second identifier associated with the consumer; and

storing targeted research invitations including the targeted research invitation delivered to the consumer, each of the second identifiers being associated with at least one of the targeted research invitations.

9. A method according to claim 1, wherein the targeted research invitation is selected from the group consisting of: an e-mail message, an e-mail attachment, and an Internet banner.

10. A method according to claim 1, wherein at least a portion of the contact information forms a hyperlink.

11. A method according to claim 10, wherein the contact information comprises a uniform resource locator (URL).

12. A method according to claim 1, wherein the targeted research invitation comprises an incentive to induce the consumer to participate in the market research

13. A method comprising the steps of:

storing a list of consumer identifiers corresponding to consumers;

storing targeted research invitations, each of the consumer identifiers being associated with at least one of the targeted research invitations;

receiving from a remote computer one of the consumer identifiers;

selecting one of the targeted research invitations for delivery to the remote computer, on the basis of the at least one targeted research invitation associated with the consumer identifier received from the remote computer; and

delivering the selected targeted research invitation to the remote computer.

14. A method according to claim 13, wherein the step of delivering comprises the step of:

delivering the selected targeted research invitation to the remote computer via e-mail.

15. A method according to claim 13, wherein the consumer identifier received from the remote computer is selected from the group consisting of: loyalty card ID, cookie ID, and e-mail address.

16. A method according to claim 13, wherein the targeted research invitations associated with each consumer identifier are targeted on the basis of purchase history information of the corresponding consumer, the purchase history information of each consumer including information of at least one purchase of an item by the consumer.

17. A method comprising the steps of:

storing purchase history information of consumers, the purchase history information of each consumer including information of at least one purchase of an item by the consumer and associated with a consumer identifier corresponding to the consumer;

selecting targeted research invitations for delivery to the consumers at remote computers, based on the corresponding purchase history information of the consumers, the targeted research invitations including contact information to be used by the consumers to participate in market research; and

associating each consumer identifier with the corresponding targeted research invitation selected for delivery to the corresponding consumer.

18. A method according to claim 17, further comprising the steps of:

updating the purchase history information; and  
analyzing the effect of consumers' participation in the market research based on the updated purchase history information.

19. A method according to claim 17, wherein the targeted research incentives comprise incentives to induce the consumers to participate in the market research.

20. A computer readable medium containing program instructions for execution on a computer system, which when executed by the computer system, cause the computer system to perform the steps in the method recited in any one of claims 1 through 19.

21. A system comprising:

memory device having embodied therein:

a first identifier and a second identifier corresponding to a consumer, the second identifier associated with purchase history information of the consumer, the purchase history information including information of at least one purchase of an item purchased by the consumer in a retail store; and

a targeted research invitation associated with the second identifier and targeted on the basis of the consumer's purchase history information, the targeted research invitation including contact information to be used by the consumer to participate in market research and an incentive to induce the consumer to participate in the market research; and

a processor in communication with said memory device, said processor configured to deliver the targeted research invitation to a remote computer associated with the first identifier.

22. A system according to claim 21, wherein the processor is further configured to:

receive the first identifier during a registration process in which the consumer provides the first identifier and the second identifier.

23. A system according to claim 21, wherein the processor is further configured to:

receive the first identifier from the remote computer prior to delivering the targeted research invitation; and

deliver the targeted research invitation to the remote computer in response to receiving the first identifier from the remote computer.

24. A system according to claim 23, wherein the first identifier is a cookie stored on the remote computer.

25. A system according to claim 21, wherein the first identifier is selected from the group consisting of: a cookie, an e-mail address, and a login ID.

26. A system according to claim 25, wherein the first identifier comprises an e-mail address, the remote computer comprises a mail server, and the processor is further configured to deliver the targeted research invitation to the remote computer via e-mail.

27. A system according to claim 21, wherein the processor is further configured to receive the second identifier and the associated targeted research invitation from a host computer.

28. A system according to claim 21, wherein the memory device has embodied therein: a list of second identifiers including the second identifier associated with the consumer; and

targeted research invitations including the targeted research invitation delivered to the consumer, each of the second identifiers being associated with at least one of the targeted research invitations.

29. A system according to claim 21, wherein the targeted research invitation is selected from the group consisting of: an e-mail message, an e-mail attachment, and an Internet banner.

30. A system according to claim 21, wherein at least a portion of the contact information forms a hyperlink.

31. A system according to claim 30, wherein the contact information comprises a uniform resource locator (URL).



32. A system according to claim 21, wherein the targeted research incentive comprises an incentive to induce the consumers to participate in the market research

33. A system comprising:  
a memory device having embodied therein:  
a list of consumer identifiers corresponding to consumers; and  
targeted research invitations, each of the consumer identifiers being associated with at least one of the targeted research invitations; and  
a processor in communication with said memory device, said processor configured to:  
receive from a remote computer one of the consumer identifiers;  
select one of the targeted research invitations for delivery to the remote computer, on the basis of the at least one targeted research invitation associated with the consumer identifier received from the remote computer; and  
deliver the selected targeted research invitation to the remote computer.

34. A system according to claim 33, wherein the means for delivering comprises the step of:  
delivering the selected targeted research invitation to the remote computer via e-mail.

35. A system according to claim 33, wherein the consumer identifier received from the remote computer is selected from the group consisting of: loyalty card ID, cookie ID, and e-mail address.

36. A system according to claim 33, wherein the targeted research invitations associated with each consumer identifier are targeted on the basis of purchase history information of the corresponding consumer, the purchase history information of each consumer including information of at least one purchase of an item by the consumer.

37. A system comprising:  
a memory device having embodied therein:  
purchase history information of consumers, the purchase history information of each

consumer including information of at least one purchase of an item by the consumer and associated with a consumer identifier associated with the consumer; and

a processor in communication with said memory device, said processor configured to:

select targeted research invitations for delivery to the consumers at remote computers, based on the corresponding purchase history information of the consumers, the targeted research invitations including contact information to be used by the consumers to participate in market research; and

associate each consumer identifier with the corresponding targeted research invitation selected for delivery to the corresponding consumer.

38. A system according to claim 37, wherein the processor is further configured to:

update the purchase history information; and

analyze the effect of consumers' participation in the market research based on the updated purchase history information.

39. A system according to claim 37, wherein the targeted research invitations comprise incentives to induce the consumers to participate in the market research.

40. A system comprising:

means for associating a first identifier corresponding to a consumer with a second identifier associated with purchase history information of the consumer, the purchase history information including information of at least one purchase of an item purchased by the consumer;

means for storing a targeted research invitation associated with the second identifier and targeted on the basis of the consumer's purchase history information, the targeted research invitation including contact information to be used by the consumer to participate in market research; and

means for delivering the targeted research invitation to a remote computer associated with the first identifier.

41. A system according to claim 40, further comprising:

means for receiving the first identifier during a registration process in which the

consumer provides the first identifier and the second identifier, prior to associating the first identifier and the second identifier.

42. A system according to claim 40, further comprising:

means for receiving the first identifier from the remote computer after the first identifier is associated with the second identifier, after the targeted research invitation is stored, and before the targeted research invitation is delivered; and

wherein the means for delivering the targeted research invitation comprises:

means for delivering the targeted research invitation to the remote computer in response to receiving the first identifier from the remote computer.

43. A system according to claim 42, wherein the first identifier is a cookie stored on the remote computer.

44. A system according to claim 40, wherein the first identifier is selected from the group consisting of: a cookie, an e-mail address, and a login ID.

45. A system according to claim 44, wherein the first identifier comprises an e-mail address, the remote computer comprises a mail server, and the means for delivering comprises:  
means for delivering the targeted research invitation to the remote computer via e-mail.

46. A system according to claim 40, further comprising:

means for receiving the second identifier and the associated targeted research invitation from a host computer.

47. A system according to claim 40, further comprising:

means for storing a list of second identifiers including the second identifier associated with the consumer; and

means for storing targeted research invitations including the targeted research invitation delivered to the consumer, each of the second identifiers being associated with at least one of the targeted research invitations.

48. A system according to claim 40, wherein the targeted research invitation is selected from the group consisting of: an e-mail message, an e-mail attachment, and an Internet banner.

49. A system according to claim 40, wherein at least a portion of the contact information forms a hyperlink.

50. A system according to claim 49, wherein the contact information comprises a uniform resource locator (URL).

51. A system according to claim 40, wherein the targeted research advertisements comprise incentives to induce the consumers to participate in the market research

52. A system comprising:  
means for storing a list of consumer identifiers corresponding to consumers;  
means for storing targeted research invitations, each of the consumer identifiers being associated with at least one of the targeted research invitations;  
means for receiving from a remote computer one of the consumer identifiers;  
means for selecting one of the targeted research invitations for delivery to the remote computer, on the basis of the at least one targeted research invitation associated with the consumer identifier received from the remote computer; and  
means for delivering the selected targeted research invitation to the remote computer.

53. A system according to claim 52, wherein the means for delivering comprises:  
means for delivering the selected targeted research invitation to the remote computer via e-mail.

54. A system according to claim 52, wherein the consumer identifier received from the remote computer is selected from the group consisting of: loyalty card ID, cookie ID, and e-mail address.

55. A system according to claim 52, wherein the targeted research invitations associated

with each consumer identifier are targeted on the basis of purchase history information of the corresponding consumer, the purchase history information of each consumer including information of at least one purchase of an item by the consumer.

56. A system comprising:

means for storing purchase history information of consumers, the purchase history information of each consumer including information of at least one purchase of an item by the consumer and associated with a consumer identifier associated with the consumer;

means for selecting targeted research invitations for delivery to the consumers at remote computers, based on the corresponding purchase history information of the consumers, the targeted research invitations including contact information to be used by the consumers to participate in market research; and

means for associating each consumer identifier with the corresponding targeted research invitation selected for delivery to the corresponding consumer.

57. A system according to claim 56, further comprising:

means for updating the purchase history information; and

means for analyzing the effect of consumers' participation in the market research based on the updated purchase history information.

58. A system according to claim 56, wherein the targeted research invitations comprise incentives to induce the consumers to participate in the market research.

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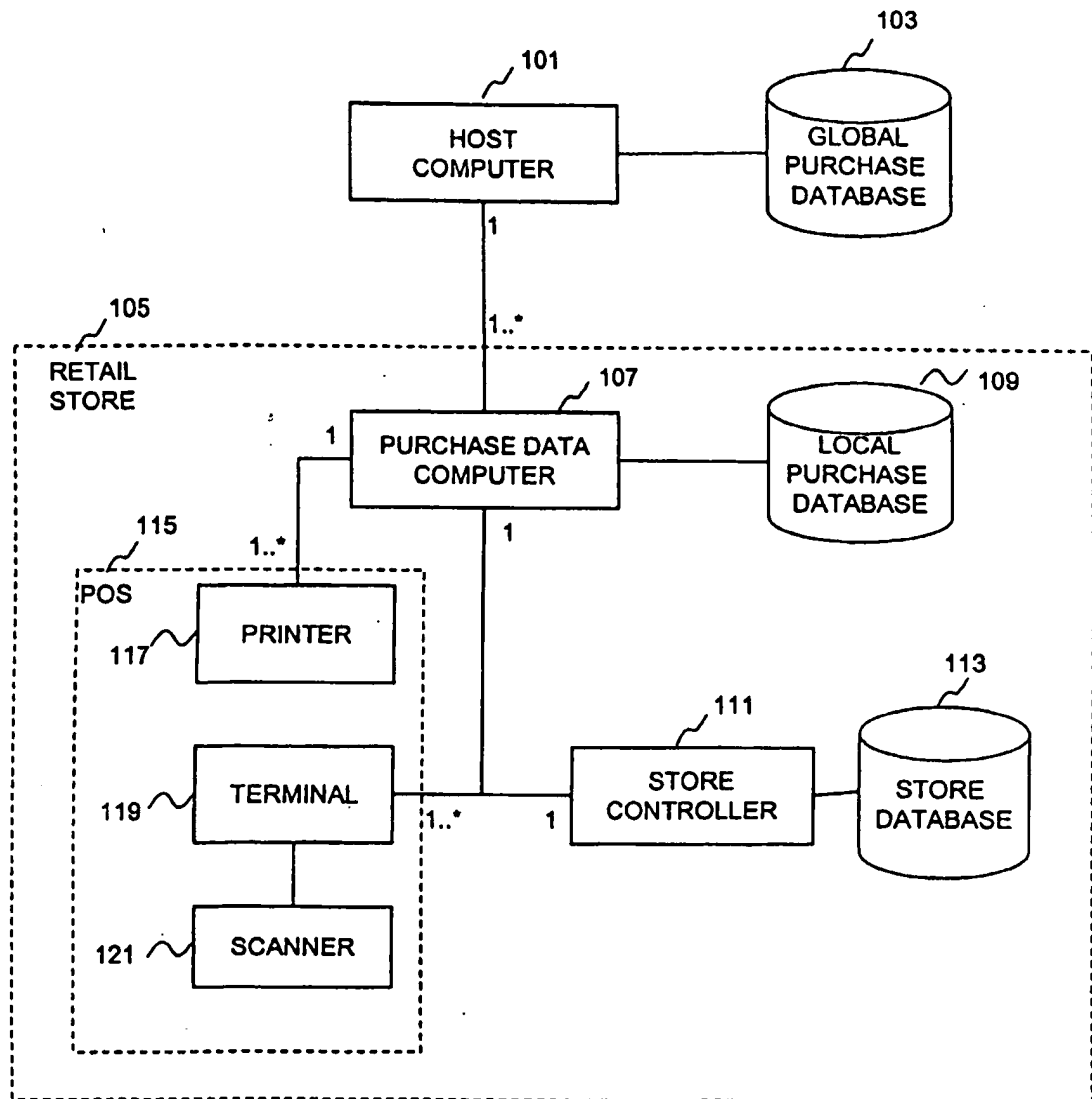


FIG. 1

201 →

203 CID	205 PURCHASE HISTORY

FIG. 2A

207 →

209 CRITERIA	211 INVITATION

FIG. 2B

213 →

215 CID	217 INVITATION

FIG. 2C

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219

221 CID	223 E-MAIL ADDRESS	225 COOKIE ID	227 LOGIN ID

FIG. 2D

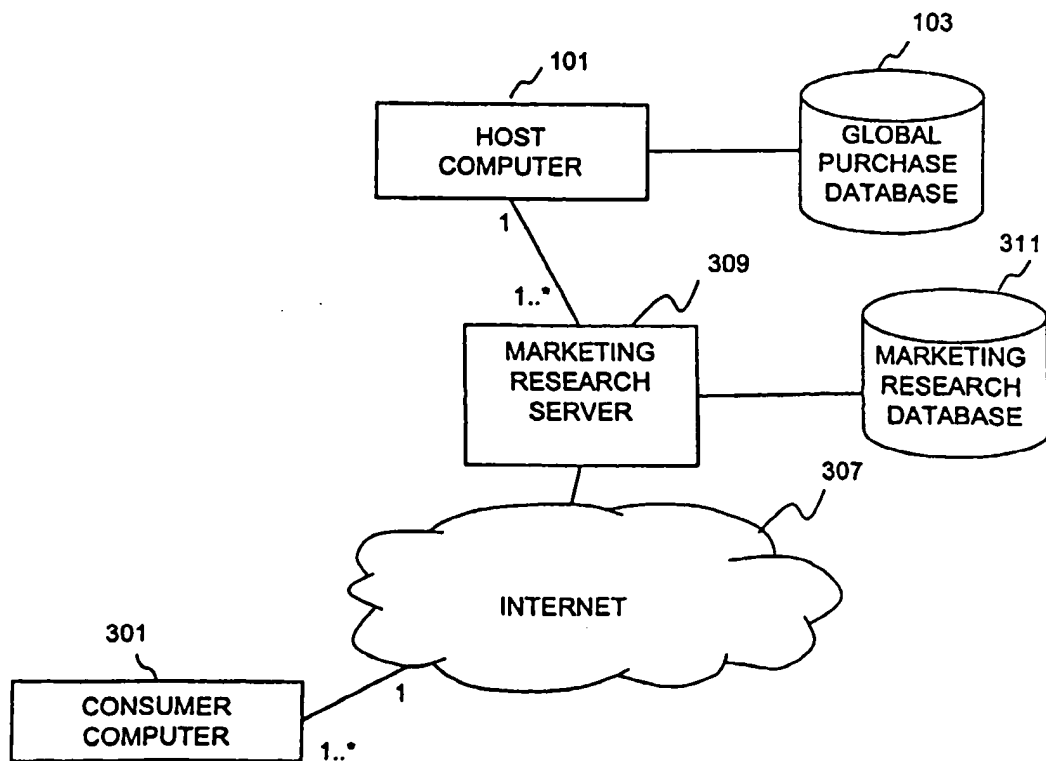


FIG. 3



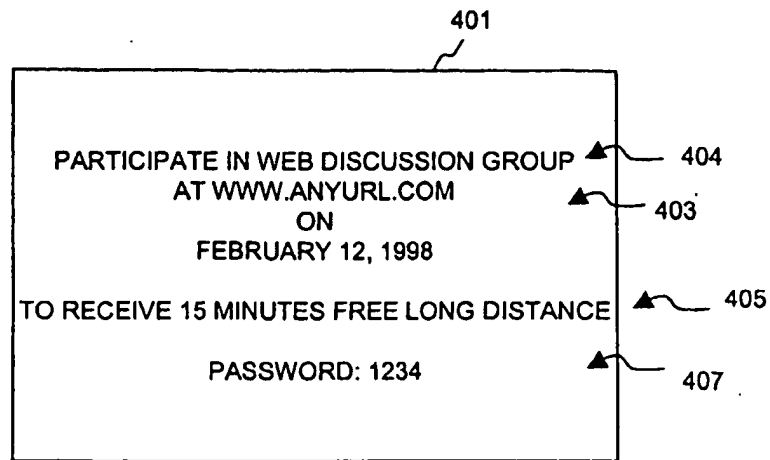


FIG. 4A

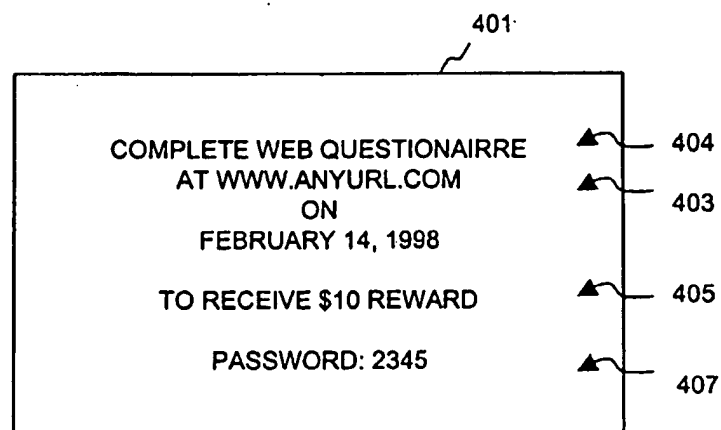


FIG. 4B

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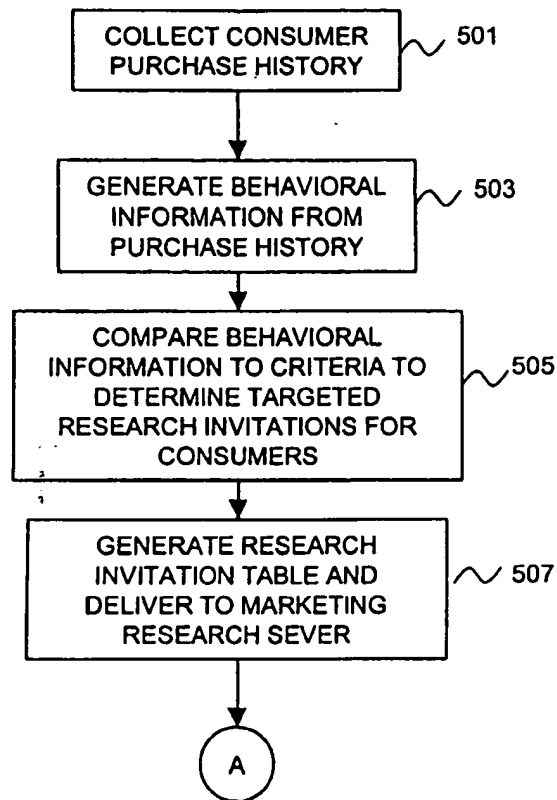


FIG. 5A

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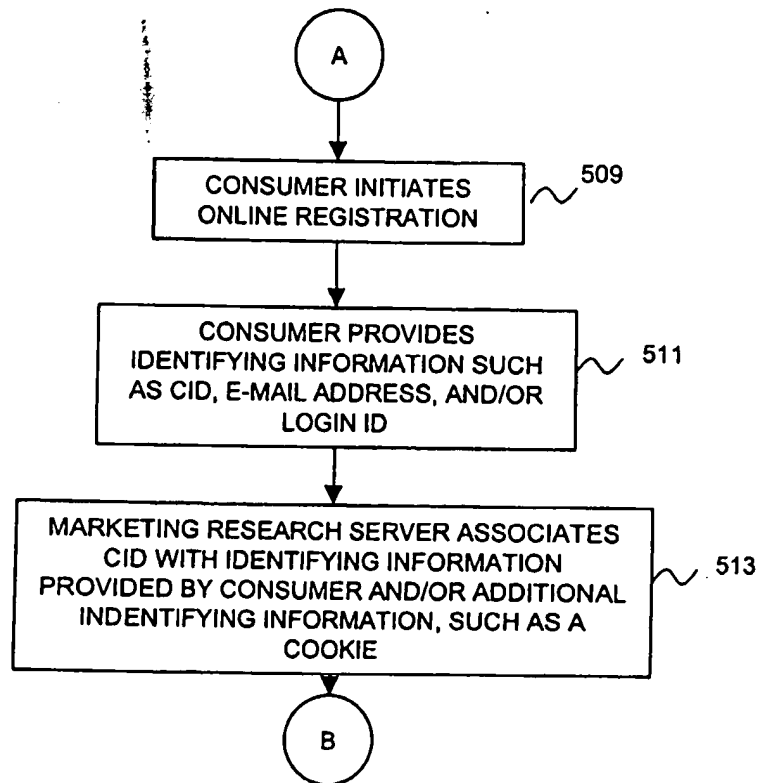


FIG. 5B

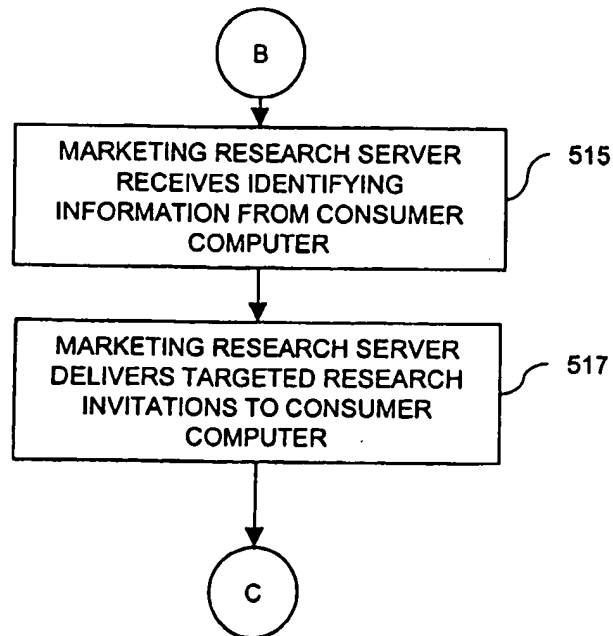


FIG. 5C

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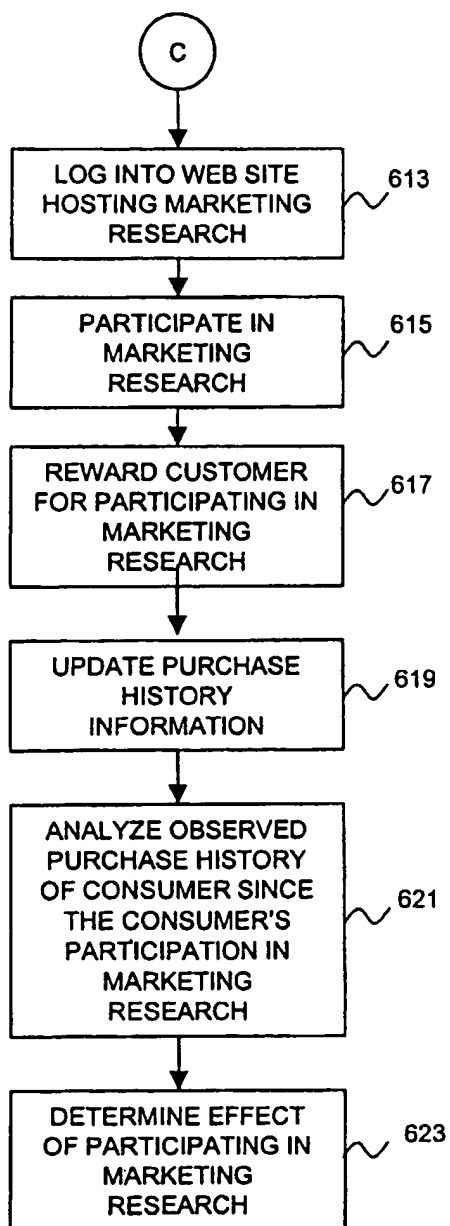


FIG. 6

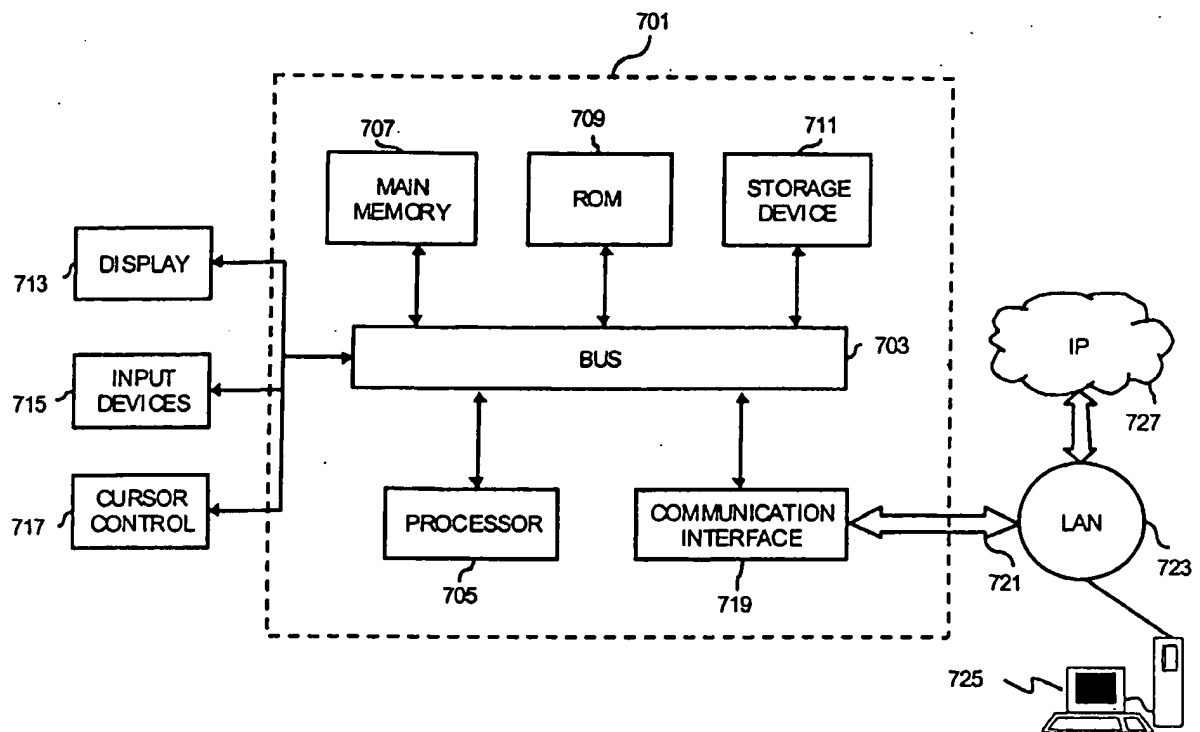
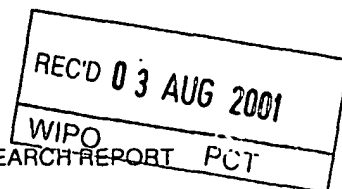


FIG. 7

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# PATENT COOPERATION TREATY

## PCT



### DECLARATION OF NON-ESTABLISHMENT OF INTERNATIONAL SEARCH REPORT

(PCT Article 17(2)(a), Rules 13ter.1(c) and Rule 39)

Applicant's or agent's file reference <b>165838W025</b>	IMPORTANT DECLARATION	Date of mailing(day/month/year) <b>30/07/2001</b>
International application No. <b>PCT/US 00/ 20825</b>	International filing date(day/month/year) <b>10/08/2000</b>	(Earliest) Priority date(day/month/year) <b>10/03/2000</b>
International Patent Classification (IPC) or both national classification and IPC		<b>G06F17/60</b>
Applicant <b>CATALINA MARKETING INTERNATIONAL INC.</b>		

This International Searching Authority hereby declares, according to Article 17(2)(a), that no international search report will be established on the international application for the reasons indicated below

- ☒ The subject matter of the international application relates to:
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  - ☐ mathematical theories
  - ☐ plant varieties.
  - ☐ animal varieties.
  - ☐ essentially biological processes for the production of plants and animals, other than microbiological processes and the products of such processes.
  - ☒ schemes, rules or methods of doing business.
  - ☐ schemes, rules or methods of performing purely mental acts.
  - ☐ schemes, rules or methods of playing games.
  - ☐ methods for treatment of the human body by surgery or therapy.
  - ☐ methods for treatment of the animal body by surgery or therapy.
  - ☐ diagnostic methods practised on the human or animal body.
  - ☐ mere presentations of information.
  - ☐ computer programs for which this International Searching Authority is not equipped to search prior art.
- ☐ The failure of the following parts of the international application to comply with prescribed requirements prevents a meaningful search from being carried out:
 

☐ the description
 ☐ the claims
 ☐ the drawings
- ☐ The failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions prevents a meaningful search from being carried out:
 

☐ the written form has not been furnished or does not comply with the standard.
 ☐ the computer readable form has not been furnished or does not comply with the standard.
- Further comments:

Name and mailing address of the International Searching Authority



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Authorized officer

Mar'a Rodríguez Nõvoa

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 203

The subject-matter claimed in claims 1-19 falls under the provisions of Article 17(2)(a)(i) and Rule 39.1(iii), PCT, such subject-matter relating to a method of doing business.

Claims 20-58 relate to a conventional system (program product, computer readable medium) for performing the business method of claims 1-19. Although these claims do not literally belong to the method category, they essentially claim protection for the same commercial effect as the method claims. The International Searching Authority considers that searching this subject-matter would serve no useful purpose. It is not at present apparent how the subject-matter of the present claims may be considered defensible in any subsequent examination phase in front of the EPO as International Preliminary Examining Authority with regard to the provisions of Article 33(1) PCT (novelty, inventive step); see also Guidelines B-VII, 1-6).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

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